DOE/RL-2001-17
Revision 0

Nonradioactive Air Emissions Notice of Construction Application for Toxic Air Pollutant Emissions at the T Plant Complex

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management
Project Hanford Management Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

United States Department of Energy
P.O. Box 550
Richland, Washington 99352

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ATTACHMENTS

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TERMS

ALARA	as low as reasonably achievable
ANSI	American National Standards Institute
ASIL	acceptable source impact level
AOP	air operating permit
BACT	best available control technology
CAS	Chemical Abstract System
CFR	Code of Federal Regulations
CWC	Central Waste Complex
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
HEPA	high-efficiency particulate air
LLBG	Low-Level Burial Grounds
MEI	maximally exposed individual
NOC	*notice of construction*
NSR	new source review
OVAs	organic vapor analyzers
PCB	polychlorinated biphenyls
PSD	Prevention of Significant Deterioration
PPE	personal protective equipment
SEPA	*State Environmental Policy Act of 1971*
SQER	small quantity emission rate
SWITS	Solid Waste Information Tracking System
TAPs	toxic air pollutants
T-BACT	toxics-best available control technology
TEDE	total effective dose equivalent
TOMES	Toxicology Occupational Medicine and Environmental Series (Hanford Technical Library online database)
TRU	transuranic
TSD	treatment, storage, and/or disposal
VOC	volatile organic compound
WAC	Washington Administrative Code
WDOH	Washington State Department of Health

METRIC CONVERSION CHART

Into metric units			Out of metric units		
If you know	Multiply by	To get	If you know	Multiply by	To get
Length			**Length**		
inches	25.40	millimeters	millimeters	0.0393	inches
inches	2.54	centimeters	centimeters	0.393	inches
feet	0.3048	meters	meters	3.2808	feet
yards	0.914	meters	meters	1.09	yards
miles	1.609	kilometers	kilometers	0.62	miles
Area			**Area**		
square inches	6.4516	square centimeters	square centimeters	0.155	square inches
square feet	0.092	square meters	square meters	10.7639	square feet
square yards	0.836	square meters	square meters	1.20	square yards
square miles	2.59	square kilometers	square kilometers	0.39	square miles
acres	0.404	hectares	hectares	2.471	acres
Mass (weight)			**Mass (weight)**		
ounces	28.35	grams	grams	0.0352	ounces
pounds	0.453	kilograms	kilograms	2.2046	pounds
short ton	0.907	metric ton	metric ton	1.10	short ton
Volume			**Volume**		
fluid ounces	29.57	milliliters	milliliters	0.03	fluid ounces
quarts	0.95	liters	liters	1.057	quarts
gallons	3.79	liters	liters	0.26	gallons
cubic feet	0.03	cubic meters	cubic meters	35.3147	cubic feet
cubic yards	0.76456	cubic meters	cubic meters	1.308	cubic yards
Temperature			**Temperature**		
Fahrenheit	subtract 32 then multiply by 5/9ths	Celsius	Celsius	multiply by 9/5ths, then add 32	Fahrenheit
Energy			**Energy**		
kilowatt hour	3,412	British thermal unit	British thermal unit	0.000293	kilowatt hour
kilowatt	0.948	British thermal unit per second	British thermal unit per second	1.055	kilowatt
Force/Pressure			**Force/Pressure**		
pounds per square inch	6.895	kilopascals	kilopascals	0.14504	pounds per square inch

Source: Engineering Unit Conversions, M. R. Lindeburg, PE., Second Ed., 1990, Professional Publications, Inc., Belmont, California.

NONRADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION APPLICATION FOR TOXIC AIR POLLUTANT EMISSIONS AT THE T PLANT COMPLEX

1.0 INTRODUCTION

This nonradioactive Notice of Construction (NOC) application is submitted for the treatment and storage and management of waste containers, containment buildings, and tanks at the T Plant Complex stationary source. The T Plant Complex stationary source consists of multiple sources of diffuse and fugitive emissions, as described herein. This NOC application is submitted in accordance with the requirements of Washington Administrative Code (WAC) 173-460-040 and pursuant to guidance provided by the Washington State Department of Ecology (Ecology).

Transuranic (TRU) mixed waste containers at the T Plant Complex are vented to preclude the buildup of hydrogen produced as a result of radionuclide decay, not as safety pressure releases.

The following activities are conducted within the T Plant Complex stationary source:

- Storage and inspection
- Transfer and staging
- Packaging and repackaging
- Treatment
- Sampling
- Radiography
- Aerosol can ventilation
- Decontamination.

This NOC application is intended to cover all existing storage structures within the current T Plant Complex treatment, storage, and/or disposal (TSD) boundary, as well as any storage structures, including waste storage pads and staging areas, that might be constructed in the future within the existing T Plant Complex boundary.

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2.0 STATE ENVIRONMENTAL POLICY ACT

A *State Environmental Policy Act* (SEPA) *of 1971* environmental checklist was prepared and submitted to Ecology (dated December 1992) (DOE-RL 1992). That checklist addressed the expansion of T Plant Complex waste treatment and storage capacity. The information contained in this NOC application updates information in the 1992 environmental checklist. This NOC application is intended to provide sufficient information to satisfy SEPA requirements in lieu of submittal of a separate and/or revised environmental checklist.

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3.0 FACILITY IDENTIFICATION AND LOCATION/BACKGROUND INFORMATION

The T Plant Complex is located in the 200 West Area (Figures 2-1 and 2-2) and provides for the treatment and storage, as described in Section 4.5, of dangerous, mixed, and/or radioactive waste generated on or off the Hanford Facility.

The T Plant Complex stationary source currently consists of the following emission sources.

3.1 221-T BUILDING

The 221-T Building, the largest structure in the T Plant Complex, is constructed of reinforced concrete and is 850 feet long by 68 feet wide by 75 feet high, covering an area of 6,480 square yards. The 221-T Building consists of a canyon divided into 20 sections, three galleries, one craneway, one railroad tunnel, and a headend. The 221-T Building is used for the treatment and storage of mixed waste (liquid and solid), storage of process equipment, decontamination of equipment and materials, storage of containerized and uncontainerized waste, and sampling and repackaging of waste.

The 221-T Building is maintained at a negative differential pressure with respect to the ambient atmosphere. The exhaust system pulls canyon air past the cell cover blocks down into the cells, through high-efficiency particulate air (HEPA) filters, and out the 291-T-1 Stack. The exhaust flow rate varies and generally is between 32,000 and 40,000 cubic feet per minute. (NOTE: The design capacity of the system is 40,000 cubic feet per minute.)

3.2 2706-T BUILDING

The 2706-T Building, 60 feet wide, 66 feet long, and 25 feet high, is a ground level building constructed of prefabricated steel with 20-foot high sidewalls. The 2706-T Building is used to decontaminate equipment such as buses, trucks, automobiles, road building equipment, process equipment, etc. The building contains two pits over which the decontamination activities are performed. Sampling, treatment, verification, and repackaging waste containers and boxes also are done in the 2706-T Building. Ventilation and HEPA filtration for the adjacent 2706-TA Building are provided by a modular unit. The maximum flow rate for the unit is about 12,000 cubic feet per minute.

3.3 2706-TA BUILDING

The 2706-TA Building, adjacent to the west end of the 2706-T Building, is 50 feet wide, 60 feet long, and about 25 feet high. This building might be used to decontaminate equipment such as buses, trucks, automobiles, road building equipment, process equipment, etc. The building contains two pits for the collection of decontamination solutions. Sampling, treatment, verification, and repackaging waste containers and boxes also are done in the 2706-TA Building. The 2706-TA Building is a pre-fabricated steel building erected on the existing concrete pad. Ventilation and HEPA filtration for the 2706-TA Building is provided by a modular unit that almost is identical to the unit used for the 2706-T Building. The maximum flow rate for the unit is about 12,000 cubic feet per minute.

3.4 2706-TB BUILDING

The 2706-TB Building, adjacent to the 2706-T Building, contains two stainless steel storage tanks (15,000 gallons and 6,000 gallons) for management of radioactive and mixed decontamination waste. The tanks have concrete secondary containment catch basins, and are equipped with leak detection systems, transfer piping, and basin/pit sump liners. To mitigate the potential for radioactive releases, a HEPA filter designed to remove particulate matter greater than 0.3 micron from the air stream is installed on each storage tank vent in the 2706-TB Building.

3.5 214-T BUILDING

The 214-T Building, northwest of the 221-T Building near the railroad tunnel, is used to store chemical products and dangerous, mixed, and other types of radioactive waste in segregated areas. The 214-T Building, 50 feet long, 29 feet wide, and 12 feet high, is constructed on a concrete pad with corrugated steel overlying I-beams. The interior is gypsum, painted with semigloss enamel. The floor is covered with a chemical-resistant coating and is divided by a raised berm. There are two sumps to contain potential spills or leaks. Ventilation for the building is provided by one ceiling fan and there is no emissions control equipment. There is a flammable material storage room, which has an exhaust fan in the northeast corner.

3.6 MISCELLANEOUS MODULAR UNITS

Miscellaneous modular units also are used to store waste items and containers as necessary. The number of containers stored in these units usually is small compared to other container storage areas. These units generally have ventilation systems with no emissions control equipment.

3.7 OTHER MISCELLANEOUS SUPPORT STRUCTURES

There are miscellaneous support structures within the T Plant Complex. The structures include concrete and asphalt storage pads, which are isolated with appropriate markings and barriers (e.g., fencing, chain). Other structures include the 277-T Building (used for storage and staging of products/equipment), 2715-T (carpenter's shop), and MO-369 (sign making shop).

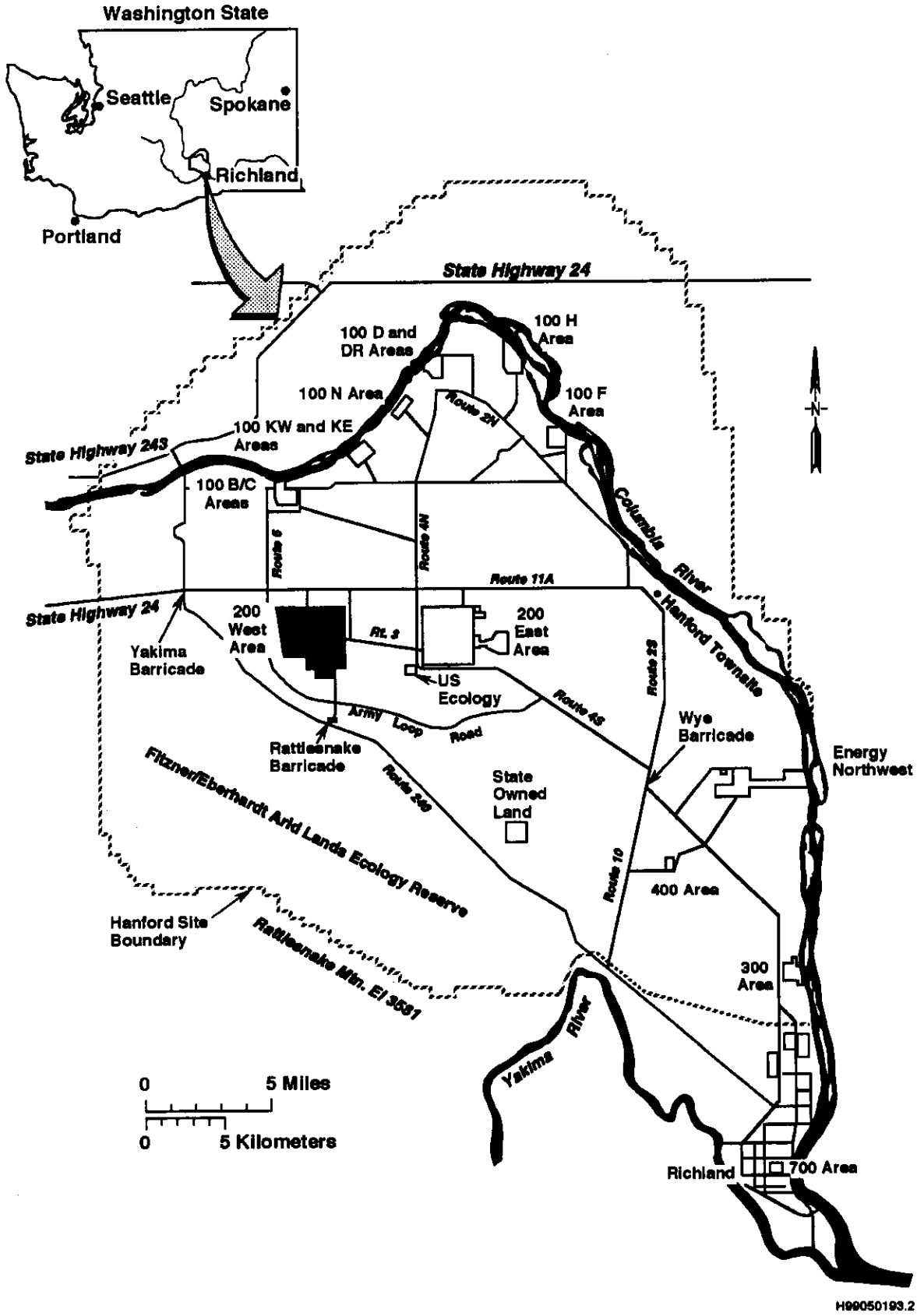

Figure 3-1. Hanford Site.

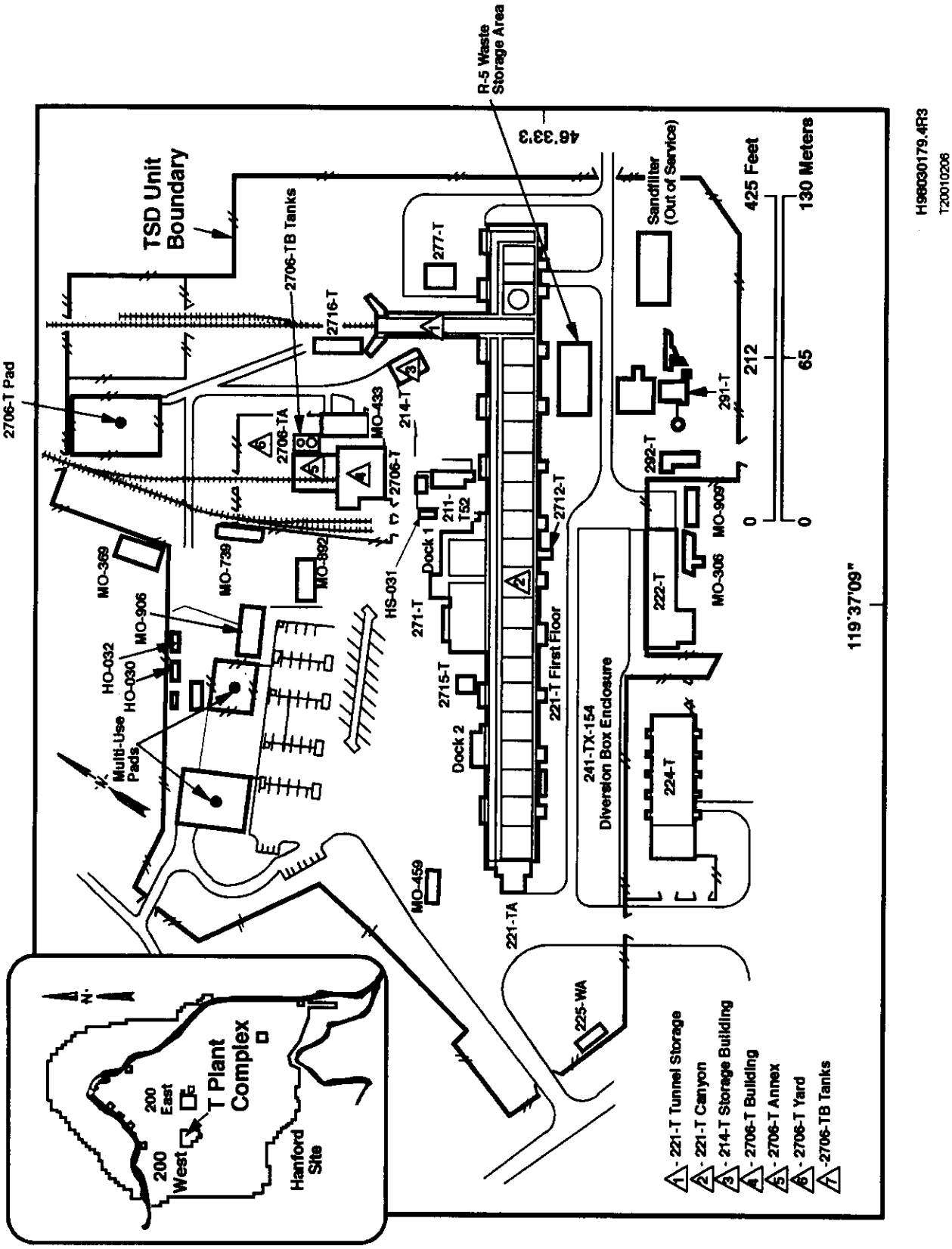

Figure 3-2. T Plant Complex, 200 West Area.

4.0 PROJECT PROCESS DESCRIPTION

The following briefly discusses the operations that occur or can occur at T Plant Complex. All waste accepted for storage at T Plant Complex is packaged in approved containers (U.S. Department of Transportation and/or U.S. Department of Energy), unless alternate packages are dictated by the size, shape, or form of waste (49 CFR 173) (e.g., boxes).

Gas generation is controlled to prevent pressurization exceeding 1.5 atmospheres and combustible gas concentrations exceeding the lower explosive limit for up to 20 years of storage. To prevent the potential buildup of gases, vents such as Nucfil®[1], vent clips, or other approved devices are used.

The majority of the vented containers within T Plant Complex are provided with a NucFil®; however, vent clips have been used in past operations. Some older containers even could have a 'permeable gasket'. Vent clips and/or permeable gaskets are no longer installed on newly generated waste.

A vent clip is a non-filtered device with gaps approximately 3 microns in size and was designed to prevent a complete seal between the drum and the drum lid. Most vented containers are fitted with NucFil® filter vents designed to provide high-efficiency filtration of particulates. These filters include a porous carbon/carbon composite of non-activated carbon fibers that restrict particulate releases and provide 99.95 percent efficiency per manufacturer specifications. The same is not true regarding gaseous/vapor contaminants. These vents are designed to allow air to flow in or out of the container at any time there is a pressure differential relative to ambient conditions, resulting in very low volume, nearly continuous flow.

Before receipt at T Plant Complex, containers are closed by the onsite generating unit or offsite generator to meet applicable U.S. Department of Transportation packaging requirements. On receipt, each container or group of containers is inspected before acceptance by T Plant Complex operations personnel for damage, proper closure, marking, and accompanying documentation.

Vented containers primarily contain mixed and/or TRU waste. All TRU waste to be retrieved from the Low-Level Burial Grounds and transported to the Central Waste Complex (CWC) is considered to be newly generated and will be vented. Before August 1998, there was no administrative way to distinguish a vented container from a sealed container. Since August of 1998, all vented containers accepted at CWC have been flagged in the Solid Waste Inventory Tracking System (SWITS) database enabling the containers to be tracked.

Newly received waste containers or existing stored waste containers can be located and/or relocated in any given storage structure, (e.g., building, pad, etc.,) at T Plant Complex. Eventually, radioactive, mixed, and dangerous waste at T Plant Complex could be treated, followed by disposal in an approved TSD unit or another approved location. Transuranic waste could be shipped offsite to WIPP or to another approved disposal facility. Dangerous waste will be shipped offsite to an approved TSD facility.

4.1 T PLANT COMPLEX OPERATIONS

The following sections briefly discuss the operations that occur or can occur at T Plant Complex.

[1] Nucfil® is a registered trademark of Nuclear Filter Technology, Incorporated.

4.1.1 Storage

All waste accepted for storage at the T Plant Complex is packaged in U.S. Department of Transportation-approved containers unless alternate packages are dictated by the size, shape, or form of waste (49 CFR 173). Waste containers in the T Plant Complex usually are double-lined. The inner containment can be either a 4-millimeter or heavier plastic liner or a 90-millimeter polyethylene liner; however, other approved methods can be used.

Liquids accepted for storage can range from:

- Bound by sorption
- Sealed in one to three leak-resistant containers, each container having a capacity of not more than 5 gallons and surrounded by sorbent material
- Bulk liquids.

Before receipt at T Plant Complex, all containers are closed by the offsite generator or onsite generating unit. This is accomplished by means such as a neoprene gasket, steel lid, locking ring, locking ring bolt, and a tightened lock nut or by other available methods to meet U.S. Department of Transportation requirements.

Containers are labeled and marked to indicate the dangerous and radioactive characteristics of the waste. All waste containers received are marked in accordance with the requirements specified under 49 CFR 172. In addition to the 49 CFR 172 marking and labeling requirements, all waste containers must be marked, as appropriate, to adequately identify the major risk(s) associated with the contents of the containers, per WAC 173-303-630(3).

4.1.2 Transfer and Staging

Waste management at T Plant Complex includes the receiving and staging of newly generated waste from onsite generating units, offsite generators, or onsite TSD units, or relocation of waste within the existing structures to support waste management campaigns or long-term storage. All of these activities support the eventual treatment and final disposal of waste stored at T Plant Complex.

4.1.3 Packaging

T Plant Complex also performs overpacking on containers that have been determined to be leaking or if structural integrity is in question. Overpacking typically consists of placing a 55-gallon container into an 85-gallon container. This process consists of placing the appropriate sorbent material between the small container and the larger container. The overpack container is labeled properly and placed back into storage.

4.1.4 Treatment

The primary mission of T Plant Complex is treatment of waste and contaminated equipment. T Plant Complex performs treatments, consisting of the following:

- Absorption: Addition of absorbent material (e.g., diatomaceous earth, universal polypropylene) to a waste matrix for the purposes of facilitating future treatment (e.g., subsequent incineration at a permitted offsite facility) and/or disposal (e.g., void fill)

- Solidification: Addition of a grout material (e.g., cement) to a waste matrix to make the waste amenable for storage or disposal

- Neutralization: Addition of a neutralizing agent (e.g., acidic or basic compounds) to make the waste noncorrosive

- Amalgamation: Treatment process that involves the bonding of mercury with other metals

- Separation and repackaging: Removal of certain waste items from a container to facilitate future treatment and disposal

- Macroencapsulation: Placement of certain waste types within a container designed to provide a barrier to the environment

- Aerosol can puncturing/compaction: Puncturing of aerosol cans to release pressure before compaction for waste minimization

- Decontamination: Removal of radionuclides or hazardous constituents to facilitate reuse or disposal.

4.1.5 Sampling

Sampling is an activity that involves the taking of a representative sample for the purposes of characterization.

4.2 FACILITY CAPACITY

The T Plant Complex manages a variety of containers, including (but not limited to) 55-gallon drums, wooden boxes, metal boxes, shipping casks. Processing material in the containers leads to a dynamic inventory, with an anticipated maximum of 5,000 drum-equivalents of waste at any one time.[2]

4.3 TEMPERATURE AND GAS COMPOSITION OF ALL EMISSIONS

The potential storage sites and containers managed within T Plant Complex are identified in Sections 3.0 and 4.0 of this NOC application. Temperatures are ambient and not controlled. The gas composition of emissions is as described in Section 7.0. Data relative to the potential gaseous inventory in each container have been developed. Any gaseous emissions would be from some, or all, of that inventory. Data are summarized in Attachment B.

[2] The 5,000 drum equivalents equates to 275,000 gallons, or approximately 1,000 cubic meters, of waste.

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5.0 VENTILATION AND AIRBORNE EMISSIONS POLLUTION CONTROL SYSTEMS

A description of the ventilation/control systems is provided in the following sections for the actively ventilated and diffuse and fugitive emission sources that comprise the T Plant Complex stationary source. The actively ventilated systems exhaust through two stacks, 291-T-1 and 296-T-7. There could be up to approximately 5,000 emission units (i.e., containers) within the nine diffuse and fugitive emission sources that comprise the T Plant Complex stationary source. The diffuse and fugitive emission sources are as follows:

- R-5 Waste Storage Area
- Treatment and Storage Pad Area
- 2706 TB Building
- 2706-T Yard
- 2706-T Treatment/Storage Pad
- 214-T Building
- 211-T Waste Storage Area
- 271-T Cage
- Conex boxes
- Other miscellaneous support structures.

5.1 ACTIVE VENTILATION SYSTEMS

The structures described in this section have active ventilation systems that discharge HEPA filtered air into the environment.

5.1.1 221-T Canyon

The 221-T Canyon is maintained at a negative differential pressure with respect to the ambient atmosphere. The main exhaust system (located in the 291-T Building) pulls canyon air past the cell cover blocks down into the cells, through high-efficiency particulate air (HEPA) filters, and out the 291-T stack. The 221-T Canyon air is exhausted through a pre-filter and two stages of testable HEPA filters before being released to the atmosphere through the 291-T-1 Stack.

5.1.2 221-T Tunnel Storage

The 221-T Tunnel Storage air is exhausted through the 291-T-1 Stack.

5.1.3 2706-T Building

The 2706-T Building air is routed through a prefilter and one HEPA filter to the 296-T-7 Stack, where the air is released to the atmosphere. Because of the presence of radionuclides in tank waste, the 2706-T Building ventilation system operates at negative differential pressure to keep air flowing away from noncontaminated locations and toward potentially more contaminated locations. From there, the air passes through HEPA filters before discharge to the environment.

5.1.4 2706-TA Building

The 2706-TA Building has an independent ventilation system, and the exhaust is routed to the 296-T-7 Stack. The system has active air balance and contamination control. Building air is pulled through a prefilter and one HEPA filter by an exhaust fan in the ventilation room. Because of the presence of radionuclides in tank waste, the 2706-TA Building ventilation system operates at negative differential pressure to keep air flowing away from noncontaminated locations and toward potentially more contaminated locations. From there, the air passes through HEPA filters before discharge to the environment.

5.2 DIFFUSE AND FUGITIVE EMISSION SOURCES VENTILATION SYSTEMS

The structures (diffuse and fugitive emission sources) described in this section were designed and constructed to protect waste containers (emission units) from the weather or its effects, not to provide containment for potential emissions. As such, the original purpose of the roof exhauster in the 214-T Building was to provide for exhausting the air from contamination due to fork lifts and other internal combustion vehicle emissions, seasonal heat buildup, personnel comfort, etc. The storage areas open to the weather protect containers from being flooded by providing drainage and easy access.

5.2.1 R-5 Waste Storage Area

There is no ventilation system associated with the R-5 Waste Storage Area.

5.2.2 Treatment and Storage Pad Area

There is no ventilation system associated with the Asphalt Pad Waste Storage Area.

5.2.3 2706-TB Building

The 2706-TB Building tanks do not manage waste that is acutely or chronically toxic by inhalation. The waste managed in the tanks and sumps is dilute aqueous waste and no acutely or chronically toxic vapors are emitted. Sumps are open and tanks are atmospheric tanks that passively are ventilated. Consequently, tank systems were not designed to prevent the escape of fumes, vapors, or other emissions. Air enters and leaves the tanks through vent lines. However, to mitigate the potential for radioactive releases, a HEPA filter designed to remove particulate matter greater than 0.3 micron from the air stream is installed on each storage tank vent in the 2706-TB Building.

5.2.4 2706-T Yard

There is no ventilation system associated with the 2706-T Yard.

5.2.5 2706-T Treatment/Storage Pad

There is no ventilation system associated with the 2706-T Treatment/Storage Pad.

5.2.6 214-T Building

The 214-T Building air is released directly to the environment.

5.2.7 211-T Waste Storage Area

There is no ventilation system associated with the 211-T Waste Storage Area. Most vented containers are fitted with NucFil® filter vents designed to provide high-efficiency filtration of particulates. The filters include a porous carbon/carbon composite of non-activated carbon fibers that restrict particulate releases but do provide 99.97 percent efficiency per manufacturer specifications. The same is not true regarding gaseous/vapor contaminants. These vents are designed to allow flow in or out of the container at any time there is a pressure differential relative to ambient conditions, resulting in very low volume, nearly continuous flow.

5.2.8 271-T Cage

There is no ventilation system associated with the 271-T Cage, which is a fenced enclosure attached to 271-T.

5.2.9 Conex Boxes

Conex boxes are storage containers that passively are ventilated.

5.2.10 Other Miscellaneous Support Structures

Other miscellaneous support structures (Section 3.7) also are diffuse and fugitive emission sources.

5.3 AIRBORNE EMISSIONS CONTROL SYSTEMS

Storage structures at T Plant Complex either are actively or passively ventilated. Building fans are operated continuously (unless down for maintenance, repair, or replacement) for the duration of treatment and/or storage campaigns.

While WAC 173-460 exempts sources such as drums from the requirements unless the drums are 'equipped with a vent other than those required solely as safety pressure release devices,' WAC 173-460 specifically does not exempt the air toxic emissions from buildings within which vented containers are stored.

Most emissions from T Plant Complex actually emanate from vented containers, which Ecology has identified as individual 'emissions units'. Therefore, the following discussion regarding controls pertains to controls for fugitive and diffuse sources and controls for emissions units. Those emissions not from vented containers result from solvents used to remove contaminants during decontamination activities. Resulting constituents drain to either of two stainless steel storage tanks (15,000 gallons and 6,000 gallons) located in the 2706-TB Building. Decontamination usually is done for the removal of radioactive contamination or for the removal of soil, oils, and greases that are not volatile.

With the exception of the 214-T Building and the modular units (all of which are used for storage activities), T Plant Complex buildings are ventilated through stack systems.

1. Fugitive and diffuse. As described in Section 3.0, the T Plant Complex stationary source is comprised of individual storage structures. With the exceptions of the 221-T canyon and the 2706-T, TA, and TB structures, the cost to rebuild/reconfigure each storage structure within T Plant Complex such that each structure is capable of maintaining a negative pressure and has a single point of exhaust would be cost prohibitive and would provide little positive environmental impact. [Section 7.0 of this document provides a more detailed discussion supporting this conclusion. That conclusion is based on data showing that of the 600-plus chemicals identified as toxic air pollutants in WAC 173-460, less than 30 ever could be expected to exceed their associated acceptable source impact level (ASIL) value.] Therefore, it is proposed that there are no physical controls applicable and reasonable for the T Plant Complex stationary source.

However, it is proposed that administrative controls be implemented for TAPs emissions from the T Plant Complex stationary source. Based on the accompanying manifest, Generator Services personnel will track 27 chemicals (Attachment A) through appropriate notification/procedures. Specifically, Generator Services personnel will identify each container containing any of the specific chemicals that require tracking; make the appropriate notification, per procedural direction, to initiate tracking and applicable evaluation; and subsequently verify that the total emissions of each individual TAP do not exceed the associated ASIL value.

2. Emission units. Constituents regulated under WAC 173-400 and 460 are emitted from individual emissions units as either particulates or gasses. Therefore, the potential for emissions of particulates and gases from each emissions unit will be considered.

Note: Particulates: Since August of 1998, all vented containers received by T Plant Complex must be fitted with a NucFil® filters. NucFil® filters are 99.7% efficient at controlling the release of particulates.

Further, as discussed in Section 4.0, there are no processes conducted that provide a motive force adequate to re-suspend particulate TAPs in the containers in T Plant Complex. Therefore, for those containers received by T Plant Complex before August 1998, not fitted with a NucFil® filter, there are no measurable TAP emissions.

6.0 AIRBORNE EMISSIONS MONITORING SYSTEMS

As a source of fugitive and diffuse emissions, (with the exceptions of the 221-T canyon and the 2706-T and -TA structures), T Plant Complex has no controlled exhaust on any of the storage structures within its boundary. Because there is no controlled exhaust on any of the T Plant Complex (described in Section 5.2), there are no exhaust monitoring/sampling systems in place on those structures.

To satisfy the Air Operating Permit (AOP) application (DOE/RL-97-05) requirement for periodic monitoring (a.k.a. gap filling), T Plant Complex personnel have implemented an inventory tracking system described in Section 5.3 for both the T Plant Complex stationary source and the individual emissions units within T Plant Complex.

In addition to the inventory tracking system described, it is proposed that an annual assessment of the results of that tracking effort be conducted to document compliance with the proposal. This assessment will be reported annually as part of *Calendar Year 2001 Nonradioactive Inventory of Airborne Emissions Report* (WMH-9552734-R7) and subsequent reports.

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7.0 EMISSIONS ESTIMATION

An estimate of all hypothetical emissions of TAPs and 'criteria pollutants' from each container in T Plant Complex, as well as from T Plant Complex in total, can be obtained by referring to the SWITS report SCR 991, 10-10-97, as updated in August 1998. The emissions estimate (identified in the SWITS report under column, "Estimated Maximum Release In Lbs.") was derived based on the following assumptions.

- There is a 100 percent release of the entire inventory in each individual container to atmosphere.

- Further, this release is assumed to occur within either a 1-year period or a 24-hour period depending on whether the release is a Class A or Class B TAP.

- Given the activities conducted at T Plant Complex, only volatile compounds (primarily in the form of VOCs) present a potential for emissions

These assumptions are conservative because the only practical source of volatile emissions is from rags, clothing, soil, etc., contaminated with volatiles. Many volatiles are contained in 'labpacks' that are sealed packages from which there can be no emissions. Further, the preceding does not take into consideration the fact that if the contaminated material is shipped to T Plant Complex in a vented container, a certain percentage of the constituent(s) will have volatized before receipt by T Plant Complex. Volatiles contained in drums or other vented containers are off-gassing continuously as a function of time. Many containers have been in the system for years and, as a practical matter, have little to no volatizing potential remaining.

Detailed SWITS data used for the emissions estimates include the following:

- Package Identification Number (PIN #)
- Chemical Abstract System Number (CAS #)
- Chemical Component Text Name
- Acceptable Source Impact Level (ASIL) in micrograms per cubic meter
- Chemical Component Weight in Pounds
- Calculated Offsite Concentration in micrograms per cubic meter (assumes 100% release of entire inventory in each container to atmosphere using dispersion modeling based on ISC3 model)
- Below ASIL (Yes or No)
- Density
- Vapor Pressure
- Molecular Weight
- Estimated Maximum Release In Pounds per Year
- Above the Small Quantity Emission Rate (SQER) (Yes, No, or Evaluate)
- SQE Class (A or B)
- SQE Rate
- Comments (to clarify/evaluate).

The methodology for applying the identified data is shown schematically as follows, and discussed in Attachment A.

Based on the identified data and methodology, it was determined that 27 TAPs might require tracking; of those, less than 10 currently are reported in SWITS.

Total VOCs are the only criteria pollutant (WAC 173-400) expected to be emitted from T Plant Complex. The New Source Review (NSR) trigger level for total VOCs is 2 tons per year per stationary source. Based on a recent evaluation at the Hanford Site Recycling Center, 9,000 aerosol cans could be punctured before the threshold would be reached. It is concluded that NSR, pursuant to WAC 173-400, is not required for T Plant Complex.

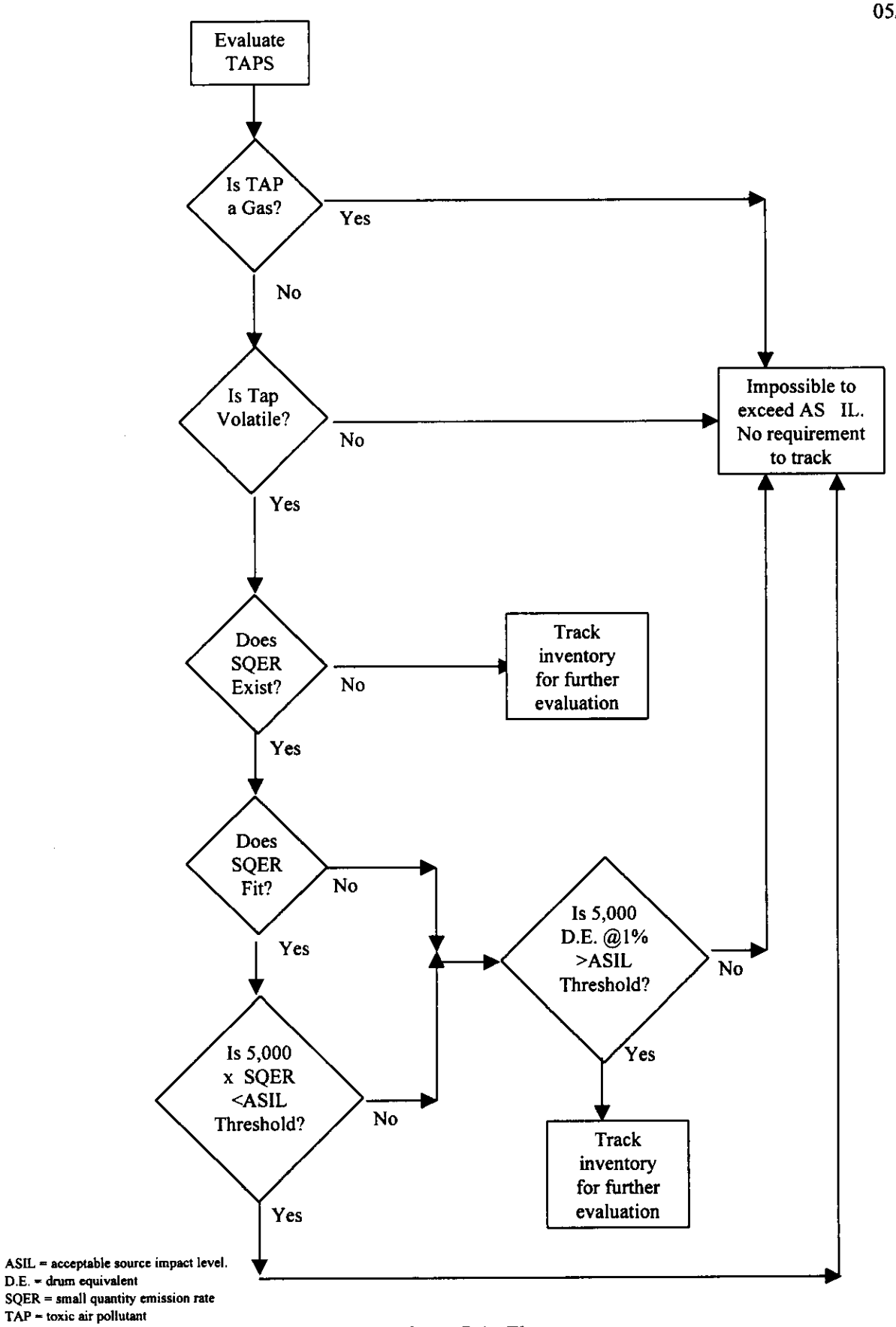

Figure 7-1. Flow.

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8.0 SUMMARY

The vented containers in T Plant Complex constitute individual emissions units. Containers are vented with a vent clip, a permeable gasket, or a NucFil® filter. As of August 1998, all vented containers accepted by T Plant Complex must be vented with a NucFil® filter. NucFil® filters are 99.7% effective against particulates and are effective against VOCs only until/if breakthrough is reached. The highest concentrations of VOCs are received by T Plant Complex in labpacks, which preclude the possibility of emissions.

8.1 CONTROLS

As a source of fugitive and diffuse emissions, (with the exceptions of the 221-T canyon and the 2706-T and -TA structures), T Plant Complex has no controlled exhaust on any of the storage structures within its boundary. Because there is no controlled exhaust on any of the T Plant Complex (described in Section 5.2), there are no exhaust monitoring/sampling systems in place on those structures. It is proposed in Section 5.3 of this document that this configuration is appropriate, given the lack of environmental benefit and the prohibitive cost associated with reconfiguring each storage structure such that it would be capable of maintaining a negative pressure.

However, it is proposed that administrative controls be implemented for TAPs emissions from the T Plant Complex stationary source. Using the container manifest, Generator Services personnel would do the following:

- Identify each container received containing any of the specific chemicals that require tracking
- Make the appropriate notification, per procedural direction, to initiate tracking and applicable evaluation
- Verify that the total emissions from the T Plant Complex stationary source, of each individual TAP, do not exceed the associated ASIL value.

8.2 MONITORING

To satisfy the AOP application requirement for periodic monitoring (a.k.a., gap filling), T Plant Complex personnel have implemented the inventory tracking system described in Section 5.3 for both the T Plant Complex stationary source and the individual emissions units.

In addition to the inventory tracking system described, it is proposed that an annual assessment of the results of that tracking effort be conducted to document compliance with the proposal. This assessment will be reported annually as part of *Calendar Year 2001 Nonradioactive Inventory of Airborne Emissions Report* (WMH-9552734-R7) and subsequent reports.

8.3 NSR FOR CRITERIA POLLUTANTS (WAC 173-400)

The only criteria pollutant expected to be emitted from T Plant Complex is total VOCs. The trigger level for NSR for total VOCs is 2 tons per year per stationary source.

VOC emissions are estimated to be insignificant, as discussed in Attachment A. It is proposed that administrative controls be implemented for VOC emissions from the T Plant Complex stationary source, similar to TAPs emissions. Therefore, it is concluded that NSR, pursuant to WAC 173-400, is not required for the T Plant Complex stationary source.

9.0 SCHEDULE

Operations are an on-going part of the solid waste activities on the Hanford Site. A detailed schedule of containers to be moved or relocated on any given day is available from Solid Waste Operations.

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10.0 REFERENCES

DOE-RL, 1992, *Notice of Intent for Expansion Under Interim Status, T Plant Complex,* U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-95-07, *Hanford Site Air Operating Permit Application*, U.S. Department of Energy, Richland, Washington.

ISC3, *Unit Concentration Factors from Industrial Source Complex Dispersion Models*, September 27, 1996, Westinghouse Hanford Company, Richland, Washington.

WMH-9552734-R7, *Calendar Year 2001 Nonradioactive Inventory of Airborne Emissions Report,* Waste Management Hanford, Richland, Washington.

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ATTACHMENT A

TAPS EVALUATION

TAPS Evaluation

The following discussion pertains to the flow diagram presented in Section 7.0.

1. If a compound is a gas, the compound will be containerized within the box or drum or is no longer present in the box or drum; therefore, tracking is not required.

2. If a compound is not volatile, processing the container will not release the compound (HEPA filters control the particulates at T Plant).

3. If an SQER does not exist (Class A), the compound must be tracked for further evaluation (six compounds identified in Attachment B).

4. If an ASIL does not exist (Class B), assign lowest SQER.

5. If the SQER amount physically will not fit inside drum, check if 5,000 drum equivalents, each containing 1% weight of TAP, is greater than ASIL threshold. If so, the compound must be tracked for further evaluation (None triggered this requirement). If not, it is not possible to exceed ASIL; therefore, tracking is not required.

6. If the SQER amount physically will fit inside drum, check if 5,000 containers (for throughput capacity), each containing the SQER amount, is less than CWC ASIL threshold. If not, the compound must be tracked for further evaluation (21 compounds triggered this requirement for T Plant Complex (Attachment B), four of which are currently in the SWITS database). If less than CWC ASIL threshold value, it is not possible to exceed the ASIL; therefore, tracking is not required.

VOC Evaluation

1. Track the total number of drum equivalents that pass through facility (running total on calendar year basis)

2. Track the total number of aerosol can punctured at facility (running total on calendar year basis)

3. Notify tracking coordinator of totals to date if either item 1 or 2 reaches 1,000 during the year, report totals at end of year

4. Based on the evaluation for VOC emissions at CWC (20 years of SWITS data), projected VOC emissions will be reported as follows: for each 1,000 drum equivalents processed by facility, 500 pounds of VOC emissions conservatively will be assumed to be released, e.g., 3,500 drums processed would be reported as 1,750 pounds.

5. An evaluation for VOC emissions at the Hanford Centralized Consolidation/Recycling Center from aerosol can puncturing has been conducted. Assumptions included container volume (i.e., 25% of recycled cans were considered to be empty; 35% were half-full; 40% were three quarters-full; and a full can was 15 ounces (by weight) and considered 1998 and 1999 can puncturing records. Based on

that evaluation, it is determined that 9,000 cans could be punctured annually at the T Plant Complex before the 2-ton threshold for VOCs would be reached. Projected VOC emissions will be reported as follows: for each 1,000 aerosol cans punctured, 500 pounds of VOC emissions will be conservatively assumed to be released, e.g., 1,500 cans punctured would be reported as 750 pounds.

6. If notification is made that either 1,000 drum equivalents have been processed to date or 1,000 aerosol cans have been punctured, projections will be made for estimated total VOC emissions for the year.

7. If projected annual VOC emissions or actual annual VOC emission estimates exceed 2 tons (e.g., 5,000 drum equivalents processed and 2,500 aerosol cans punctured, or 8,000 drum equivalents and no aerosol cans punctured), further analysis will be required. In that case, drums clearly identified as not containing VOCs could be excluded from the total VOC emission estimates.

8. T Plant Complex will be added as an emission point to the annual air emission inventory report, in accordance with WAC 173-400-105.

ATTACHMENT B

CALCULATION OF POLLUTANT INVENTORY FOR ACTIVITY

The current total capacity of the buildings and modules in T Plant Complex is estimated to be approximately 5,000 drum equivalents at any one time in the dynamic operating environment. A conservative accounting shows less than 20 percent of containers currently stored at T Plant Complex are vented.

There are approximately 600 regulated chemicals in WAC 173-460. Historically, approximately 200 of those chemicals have been identified as being processed through the T Plant Complex. Given that future onsite and offsite deliveries of chemicals cannot be known at this time, it is possible that any of the regulated TAPs could be received. The range of chemicals stored at T Plant Complex has remained fairly constant based on past operations.

The following regulated TAPs, from WAC 173-460, have been evaluated to determine the necessity for tracking (as discussed in Attachment A). As noted, 27 chemicals have a potential to give rise to tracking requirements.

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List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
----	Polyaromatic hydrocarbon (PAH) emissions	0.00048	B	175		No	No
----	Coke oven emissions		A	NO SQER		No	No
----	Primary aluminum smelter uncontrolled roof vent polyaromatic hydrocarbon (PAH) emissions [Note: Quantify according to WAC 173-460-050 (4)(d)]	0.0013	A	0.5		No	No
----	Cotton dust, raw	0.67	B	175		No	No
----	Iron salts, soluble as Fe * (as ferric chloride)	3.3	B	175		No	No
----	Welding fumes	17.0000000	A	500		No	No
----	Fibrous glass dust	33	B	5,250		No	No
----	Fine mineral fibers	33	B	5,250		No	No
----	Hexane, other isomers * (as isohexane)	5900	B	43,748		Yes	No
** 109-86-4	Glycol ethers * (as 2-Methoxyethanol)	20	B	1,750		Yes	No
** 8032-32-4	Rubber solvent (Naphtha) * (approximate)	5300	B	43,748		Yes	No
100-00-5	p-Nitrochlorobenzene	2.0	B	175		No	No
100-01-6	p-Nitroaniline	10	B	1,750		No	No
100-02-7	4-Nitrophenol (use lowest Class B ASIL)	0.15	B	175	Yes	No	No
10025-67-9	Sulfur monochloride	18	B	1,750		No	No
10025-87-3	Phosphorus oxychloride	2.1	B	175		No	No
10026-13-8	Phosphorus pentachloride	2.8	B	175		No	No
10035-10-6	Hydrogen bromide	33	B	5,250	?	Yes	No
100-37-8	Diethylaminoethanol	170	B	22,750	Yes	Yes	No
100-41-4	Ethyl benzene	1000	B	43,748	Yes	Yes	No
100-42-5	Styrene	1000	B	43,748	Yes	Yes	No
100-44-7	Benzyl chloride	17	B	1,750		Yes	No
10049-04-4	Chlorine dioxide	0.2	B	175		Yes	No
100-61-8	N-Methyl aniline	7.3	B	175	Yes	Yes	No
100-63-0	Phenylhydrazine	1.5	B	175		No	No
100-74-3	N-Ethylmorpholine	77	B	10,500		Yes	No
10102-43-9	Nitric oxide	100	B	17,500		No	No
101-14-4	4,4'-Methylenebis (2-Chloroaniline) (MBOCA)	0.7000000	A	50		No	No
101-68-8	Methylene bis(phenyl isocyanate)	0.2	B	175		No	No
101-77-9	4,4-Methylene dianiline	2.7000000	A	500	Yes	No	No
101-84-8	Phenyl ether	23	B	1,750		No	No
10210-68-1	Cobalt carbonyl as Co	0.33	B	175		No	No
102-54-5	Dicyclopentadienyl iron	33	B	5,250	Yes	No	No
102-81-8	2-N-Dibutylaminoethanol	47	B	5,250		Yes	No
10294-33-4	Boron tribromide	33	B	5,250		Yes	No
105-46-4	sec-Butyl acetate	3200	B	43,748		Yes	No
105-60-2	Caprolactam, dust	3.3	B	175		No	No
105-60-2	Caprolactam, vapor	67	B	10,500		No	No
106-35-4	Ethyl butyl ketone	780	B	43,748		Yes	No
106-46-7	1,4-Dichlorobenzene	1.5000000	A	500	*	Yes	No
106-49-0	p-Toluidine	29	B	1,750		Yes	No
106-50-3	p-Phenylenediamine	0.33	B	175	*	No	No
106-51-4	Quinone	1.5	B	175		Yes	No
106-87-6	Vinyl cyclohexene dioxide	200	B	22,750		No	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
106-88-7	1,2-Epoxybutane	20	B	1,750	*	No	No
106-89-8	Epichlorohydrin	0.8300000	A	50	*	Yes	No
106-92-3	Allyl glycidyl ether (AGE)	77	B	10,500		Yes	No
106-93-4	Ethylene dibromide (dibromethane)	0.0045000	A	0.5		Yes	No
106-97-8	Butane	6300.0	B	43,748	*	Yes	No
106-99-0	1,3-Butadiene	0.0036000	A	0.5		Yes	No
107-02-8	Acrolein	0.02	B	175		Yes	Yes (SQER Fits)
107-05-1	Allyl chloride	1.0	B	175		Yes	No
107-06-2	1,2-Dichloroethane (ethylene chloride)	0.0380000	A	10	*	Yes	No
107-07-3	Ethylene chlorohydrin	11	B	1,750		Yes	No
107-13-1	Acrylonitrile	0.0150000	A	10		Yes	No
107-15-3	Ethylene diamine	83	B	10,500	*	Yes	No
107-18-6	Allyl alcohol	17	B	1,750		Yes	No
107-19-7	Propargyl alcohol	7.7	B	175	*	Yes	No
107-20-0	Chloroacetaldehyde	11	B	1,750	*	Yes	No
107-21-1	Ethylene glycol	420	B	43,748	*	No	No
107-31-3	Methyl formate	820	B	43,748		Yes	No
107-41-5	Hexylene glycol	400	B	43,748	*	No	No
107-49-3	TEPP	0.16	B	175		No	No
107-66-4	Dibutyl phosphate	29	B	1,750	*	No	No
107-87-9	Methyl propyl ketone	2300	B	43,748		Yes	No
107-98-2	Propylene glycol monomethyl ether	2000	B	43,748	*	Yes	No
108-03-2	1-Nitropropane	20	B	1,750	*	Yes	No
108-05-4	Vinyl acetate	200	B	22,750	*	Yes	No
108-10-1	Methyl isobutyl ketone (MIBK)	680	B	43,748	*	Yes	No
108-11-2	Methyl isobutyl carbinol	350	B	43,748		Yes	No
108-18-9	Diisopropylamine	67	B	10,500		Yes	No
108-20-3	Isopropyl ether	3500	B	43,748		Yes	No
108-21-4	Isopropyl acetate	3500	B	43,748		Yes	No
108-24-7	Acetic anhydride	67	B	10,500	*	Yes	No
108-31-6	Maleic anhydride	3.3	B	175		No	No
108-43-0	Chlorophenols	0.1800000	A	50	*	Yes	No
108-44-1	m-Toluidine	29	B	1,750	*	Yes	No
108-46-3	Resorcinol	150	B	22,750		No	No
108-83-8	Diisobutyl ketone	480	B	43,748		Yes	No
108-84-9	sec-Hexyl acetate	980	B	43,748		Yes	No
108-87-2	Methylcyclohexane	5400	B	43,748	*	Yes	No
108-88-3	Toluene	400	B	43,748	*	Yes	No
108-90-7	Chlorobenzene	150	B	22,750	*	Yes	No
108-91-8	Cyclohexylamine	140	B	22,750		Yes	No
108-93-0	Cyclohexanol	690	B	43,748		Yes	No
108-94-1	Cyclohexanone	330	B	43,748	*	Yes	No
108-95-2	Phenol	63	B	10,500	*	Yes	No
108-98-5	Phenyl mercaptan	7.7	B	175		Yes	No
109-59-1	Isopropoxyethanol	350	B	43,748		Yes	No
109-60-4	n-Propyl acetate	2800	B	43,748		Yes	No
109-66-0	Pentane	6000	B	43,748	*	Yes	No
109-73-9	n-Butylamine	50	B	5,250		Yes	No
109-79-5	n-Butyl mercaptan	6.0	B	175		Yes	No
109-86-4	2-Methoxyethanol	20	B	1,750	*	Yes	No
109-87-5	Methylal	10000	B	43,748	*	Yes	No
109-89-7	Diethylamine	100	B	17,500		Yes	No
109-94-4	Ethyl formate	1000	B	43,748		Yes	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
109-99-9	Tetrahydrofuran	2000	B	43,748	*	Yes	No
110-12-3	Methyl isoamyl ketone	780	B	43,748	*	Yes	No
110-19-0	Isobutyl acetate	2400	B	43,748	*	Yes	No
110-43-0	Methyl n-amyl ketone	780	B	43,748	Yes	Yes	No
110-49-6	2-Methoxyethyl acetate	80	B	10,500		Yes	No
110-54-3	Hexane (n-Hexane)	200	B	22,750	?	Yes	No
110-62-3	n-Valeraldehyde	590	B	43,748		Yes	No
110-80-5	2-Ethoxyethanol	200	B	22,750	*	Yes	No
110-82-7	Cyclohexane	3400	B	43,748	*	Yes	No
110-83-8	Cyclohexene	3400	B	43,748	*	Yes	No
110-86-1	Pyridine	53	B	5,250	*	Yes	No
110-91-8	Morpholine	240	B	22,750	*	Yes	No
111-15-9	2-Ethoxyethyl acetate	90	B	10,500	*	Yes	No
111-30-8	Glutaraldehyde	2.5	B	175		Yes	No
111-40-0	Diethylene triamine	14	B	1,750	*	Yes	No
111-42-2	Diethanolamine	43	B	5,250		No	No
111-44-4	Bis(2-chloroethyl)ether	0.0030000	A	0.5	*	Yes	No
111-65-9	Octane	4700	B	43,748		Yes	No
111-76-2	2-Butoxyethanol	400	B	43,748	*	Yes	No
111-84-2	Nonane	3500	B	43,748	*	Yes	No
114-26-1	Propoxur	1.7	B	175		No	No
115-29-7	Endosulfan	0.33	B	175		No	No
115-86-6	Triphenyl phosphate	10	B	1,750	*	No	No
115-90-2	Fensulfothion	0.33	B	175		No	No
117-81-7	Bis(2-ethylhexyl)phthalate (DEHP)	2.5000000	A	500	*	No	No
118-52-5	1,3-Dichloro-5,5-Dimethyl hydantoin	0.67	B	175		No	No
118-74-1	Hexachlorobenzene	0.0022000	A	0.5	Yes	No	No
118-96-7	2,4,6-Trinitrotoluene	1.7	B	175		No	No
1189-85-1	tert-Butyl chromate, as CrO3	0.33	B	175		No	No
119-93-7	3,3-Dimethyl benzidine	0.0038000	A	0.5		No	No
12079-65-1	Manganese cyclopentadienyl tricarbonyl *	0.33	B	175	?	No	No
120-80-9	Catechol	77	B	10,500		No	No
120-82-1	1,2,4-Trichlorobenzene	120	B	17,500	*	Yes	No
12108-13-3	Methylcyclopentadienyl manganese tricarbonyl	0.67	B	175		No	No
121-14-2	2,4-Dinitrotoluene	5.0	B	175	Yes	No	No
12125-02-9	Ammonium chloride fume	33	B	5,250	Yes	No	No
121-44-8	Triethylamine	7.0	B	175	*	Yes	No
121-45-9	Trimethyl phosphite	33	B	5,250		Yes	No
121-69-7	Dimethylaniline	83	B	10,500	?	Yes	No
121-75-5	Malathion	33	B	5,250		No	No
121-82-4	Cyclonite	5	B	175		No	No
122-39-4	Diphenylamine	33	B	5,250	*	Yes	No
122-60-1	Phenyl glycidyl ether	2000	B	43,748	*	No	No
122-66-7	1,2-Diphenylhydrazine	0.0045000	A	0.5		No	No
123-19-3	Dipropyl ketone	780	B	43,748		Yes	No
123-31-9	Hydroquinone	6.7	B	175	Yes	No	No
123-38-6	Propionaldehyde	0.15	B	175		Yes	Yes (SQER Fits)
123-42-2	Diacetone alcohol	790	B	43,748	*	Yes	No
123-51-3	Isoamyl alcohol	1200	B	43,748	*	Yes	No
123-86-4	n-Butyl acetate	2400	B	43,748	*	Yes	No
123-91-1	1,4-Dioxane	0.0320000	A	10	*	Yes	No
123-92-2	Isoamyl acetate	1700	B	43,748		Yes	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
124-40-3	Dimethylamine	60	B	10,500		Yes	No
12604-58-9	Ferrovanadium dust	3.3	B	175		No	No
126-73-8	Tributyl phosphate	7.3	B	175	*	No	No
126-98-7	Methylacrylonitrile	9.0	B	175		Yes	No
126-99-8	þ-Chloroprene	120.0000000	A	500		Yes	No
127-18-4	Perchloroethylene (tetrachloroethylene)	1.1000000	A	500	*	Yes	No
127-19-5	Dimethyl acetamide	120	B	17,500		Yes	No
128-37-0	2,6-Ditert. butyl-p-cresol	33.0000000	A	500		No	No
1300-73-8	Xylidine	8.3	B	175		Yes	No
1303-86-2	Boron oxide	33	B	5,250		No	No
1303-96-4	Borates, anhydrous	3.3	B	175	*	No	No
1303-96-4	Borates, pentahydrate	3.3	B	175	*	No	No
1303-96-4	Borates, decahydrate	17	B	1,750	*	No	No
1304-82-1	Bismuth telluride Se doped	17	B	1,750		No	No
1304-82-1	Bismuth telluride	33	B	5,250		No	No
1305-62-0	Calcium hydroxide	17	B	1,750	*	No	No
1305-78-8	Calcium oxide	6.7	B	175	*	No	No
1309-37-1	Iron oxide fume, Fe2O3 as Fe	17	B	1,750	*	No	No
1309-48-4	Magnesium oxide fume	33	B	5,250		No	No
1309-64-4	Antimony trioxide, as Sb	1.7	B	175		No	No
1310-58-3	Potassium hydroxide	6.7	B	175	*	No	No
1310-73-2	Sodium hydroxide	6.7	B	175	*	No	No
131-11-3	Dimethylphthalate	17	B	1,750	*	No	No
13121-70-5	Cyhexatin	17	B	1,750		No	No
1314-13-2	Zinc oxide, fume	17	B	1,750	*	No	No
1314-62-1	Vanadium, as V2O5	0.17	B	175	*	No	No
1314-80-3	Phosphorus pentasulfide	3.3	B	175		No	No
1319-77-3	Cresol, all isomers	73	B	10,500	*	Yes	No
1321-64-8	Pentachloronaphthalene	1.7	B	175		No	No
1321-65-9	Trichloronaphthalene	17	B	1,750		No	No
1321-74-0	Divinyl benzene	180	B	22,750		Yes	No
1330-20-7	Xylenes (m-,o-,p-isomers)	1500	B	43,748	*	Yes	No
133-06-2	Captan	17	B	1,750		No	No
1332-21-4	Asbestos (Note: fibers/ml)	0.0000044	A	NO SQER	*	No	No
1333-86-4	Carbon black	12	B	1,750	*	No	No
1335-87-1	Hexachloronaphthalene	0.67	B	175		Yes	No
1335-88-2	Tetrachloronaphthalene	6.7	B	175		No	No
1336-36-3	Polychlorinated biphenyls (PCB)	0.0045000	A	0.5	*	No	No
1338-23-4	Methyl ethyl ketone peroxide	5.0	B	175	*	Yes	No
133-90-4	Chloramben	0.15	B	175		No	No
13463-40-6	Iron pentacarbonyl, as Fe	0.83	B	175		Yes	No
13494-80-9	Tellurium & compounds as Te	0.33	B	175		No	No
13530-65-9	Zinc chromates	0.033	B	175	*	No	No
136-78-7	Sesone	33	B	5,250		Yes	No
137-05-3	Methyl 2-cyanoacrylate	30	B	5,250		Yes	No
137-26-8	Thiram	3.3	B	175		No	No
138-22-7	n-Butyl lactate	83	B	10,500		Yes	No
13838-16-9	Enflurane	1900	B	43,748		Yes	No
1395-21-7	Subtilisins	0.0002	B	175		No	No
140-88-5	Ethyl acrylate	66	B	10,500	*	Yes	No
141-32-2	Butyl acrylate	170	B	22,750	*	Yes	No
141-43-5	Ethanolamine	25	B	1,750	*	Yes	No
141-66-2	Dicrotophos	0.83	B	175		No	No
141-78-6	Ethyl acetate	4800	B	43,748	*	Yes	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
141-79-7	Mesityl oxide	200	B	22,750	*	Yes	No
142-64-3	Piperazine dihydrochloride	17	B	1,750		No	No
142-82-5	Heptane (n-Heptane)	5500	B	43,748	*	Yes	No
144-62-7	Oxalic acid	3.30	B	175	*	No	No
14484-64-1	Ferbam	33	B	5,250		No	No
1477-55-0	m-Xylene a,a'-diamine	0.33	B	175		No	No
148-01-6	Dinitolmide	17	B	1,750		No	No
14977-61-8	Chromyl chloride	0.53	B	175		Yes	No
150-76-5	4-Methoxyphenol	17	B	1,750		No	No
151-56-4	Ethylenimine	2.9	B	175		Yes	No
151-67-7	Halothane	1300	B	43,748		Yse	No
1563-66-2	Carbofuran	0.33	B	175		No	No
156-62-7	Calcium cyanamide	1.7	B	175		No	No
1582-09-8	Trifluralin	0.15	B	175		No	No
16219-75-3	Ethylidene norbornene	83	B	10,500		Yes	No
1634-04-4	Methyl tert-butyl ether	500	B	43,748		Yes	No
16752-77-5	Methomyl	8.3	B	175		No	No
16842-03-8	Cobalt hydrocarbonyl	0.33	B	175		Yes	No
16984-48-8	Fluorides, as F	8.3	B	175		No	No
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)	0.00000003	A	NO SQER		No	No
17702-41-9	Decaborane	0.83	B	175		No	No
17804-35-2	Benomyl	33	B	5,250		No	No
1912-24-9	Atrazine	17	B	1,750		No	No
1918-02-1	Picloram	33	B	5,250		No	No
19287-45-7	Diborane	0.37	B	175		Yes	No
1929-82-4	Nitrapyrin	33	B	5,250		No	No
19624-22-7	Pentaborane	0.043	B	175		Yes	Yes (SQER Fits)
2039-87-4	o-Chlorostyrene	940	B	43,748		Yes	No
20816-12-0	Osmium tetroxide, as Os	0.0053	B	175		Yes	Yes (SQER Fits)
2104-64-5	EPN	1.7	B	175		No	No
21087-64-9	Metribuzin	17	B	1,750		No	No
21351-79-1	Cesium hydroxide	6.7	B	175		No	No
2179-59-1	Allyl propyl disulfide	40.0	B	5,250		Yes	No
22224-92-6	Fenamiphos	0.33	B	175		No	No
2234-13-1	Octachloronaphthalene	0.33	B	175		No	No
2238-07-5	Diglycidyl ether	1.7	B	175		Yes	No
2425-06-1	Captafol	0.33	B	175		No	No
2426-08-6	n-Butyl glycidyl ether (BGE)	440	B	43,748		Yes	No
25013-15-4	Vinyl toluene	800	B	43,748		Yes	No
2551-62-4	Sulfur hexafluoride	20000	B	43,748		Yes	No
25551-13-1	Trimethyl benzene	420	B	43,748		Yes	No
25639-42-3	Methylcyclohexanol	780	B	43,748		Yes	No
26140-60-3	Terphenyls	16	B	1,750		No	No
26628-22-8	Sodium azide	1.0	B	175		No	No
26952-21-6	Isoocytl alcohol	890	B	43,748		Yes	No
2698-41-1	o-Chlorobenylidene malonitrile	1.300	B	175		No	No
2699-79-8	Sulfuryl fluoride	67	B	10,500		Yes	No
287-92-3	Cyclopentane	5700	B	43,748		Yes	No
29191-52-4	Anisidine (o-,p- isomers)	1.7	B	175		No	No
2921-88-2	Chlorpyrifos	0.67	B	175		No	No
2971-90-6	Clopidol	33	B	5,250		No	No
298-00-0	Methyl parathion	0.67	B	175		No	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
298-02-2	Phorate	0.17	B	175		No	No
298-04-4	Disulfuton	0.3	B	175		No	No
299-84-3	Ronnel	33	B	5,250		No	No
299-86-5	Crufomate	17	B	1,750		No	No
300-76-5	Naled	10	B	1,750		No	No
302-01-2	Hydrazine	0.0002000	A	NO SQER	*	Yes	Yes (Query)
309-00-2	Aldrin	0.0002000	A	NO SQER		No	No
314-40-9	Bromacil	33	B	5,250		No	No
319-84-6	Hexachlorocyclohexane (Lindane) alpha BHC	1.7000000	A	500		No	No
319-85-7	Lead compounds (CAS # is same as Hexachlorocyclohexane beta BHC)	0.5	A	50		No	No
319-85-7	Hexachlorocyclohexane(Lindane) beta BHC	1.7000000	A	500		No	No
330-54-1	Diuron	33	B	5,250		No	No
3333-52-6	Tetramethyl succinonitrile	9.3	B	175		No	No
333-41-5	Diazinon	0.33	B	175		No	No
334-88-3	Diazomethane	1.1	B	175		Yes	No
3383-96-8	Temephos	33	B	5,250		No	No
34590-94-8	Dipropylene glycol methyl ether	2000	B	43,748		Yes	No
353-50-4	Carbonyl fluoride	18	B	1,750		Yes	No
35400-43-2	Sulprofos	3.3	B	175		Yes	No
3547-04-4	DDE (p,p'-dichlorodiphenyldichloro-ethylene)	0.1000000	A	20		No	No
3687-31-8	Lead arsenate, as Pb3 (A2O4)2	0.50	B	175		No	No
3689-24-5	Sulfotep	0.67	B	175		No	No
3825-26-1	Ammonium perfluorooctanoate	0.33	B	175		Yes	Yes (SQER Fits)
4016-14-2	Isopropyl glycidyl ether (IGE)	790	B	43,748		Yes	No
4098-71-9	Isophorone diisocyanate	0.15	B	175		No	No
4170-30-3	Crotonaldehyde	20	B	1,750		Yes	No
420-04-2	Cyanamide	6.7	B	175		No	No
460-19-5	Cyanogen	67	B	10,500		Yes	No
463-51-4	Ketene	2.9	B	175		Yes	No
463-58-1	Carbonyl sulfide	0.15	B	175		Yes	No
4685-14-7	Paraquat	4.5	B	175		No	No
479-45-8	Tetryl	5.0	B	175		No	No
50-00-0	Formaldehyde	0.0770000	A	20	*	Yes	No
50-29-3	DDT (1,1,1 Trichloro-2,2-Bis-(p-chlorophenyl)-ethane)	0.0100000	A	0.5		No	No
50-32-8	Benzo(a)pyrene	0.0004800	A	NO SQER	*	No	No
504-29-0	2-Aminopyridine	6.3	B	175		Yes	No
506-77-4	Cyanogen chloride	2.5	B	175	*	Yes	No
509-14-8	Tetranitromethane	27	B	1,750		Yes	No
510-15-6	Chlorobenzilate	0.2000000	A	50		No	No
51-12-5	Cyanides, as CN	17	B	1,750		Yes	No
5124-30-1	Methylene bis (4-cyclo-hexylisocyanate)	0.18	B	175		No	No
51-28-5	2,4-Dinitrophenol	0.15	B	175		No	No
51-79-5	Ethyl carbamate	0.150	B	175		Yes	Yes (SQER Fits)
528-29-0	Dinitrobenzene, all isomers	3.3	B	175		No	No
532-27-4	a-Chloroacetophenone	1.1	B	175		No	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
534-52-1	Dinitro-o-cresol	0.67	B	175		No	No
540-59-0	1,2-Dichloroethylene	2600	B	43,748		Yes	No
540-73-8	1,2-Dimethylhydrazine	4.0000000	A	500		Yes	No
540-84-1	2,2,4-Trimethylpentane	0.15	B	175	*	Yes	Yes (SQER Fits)
540-88-5	tert-Butyl acetate	3200	B	43,748		Yes	No
54-11-5	Nicotine	1.7	B	175		No	No
541-85-5	Ethyl amyl ketone	440	B	43,748		Yes	No
542-75-6	Dichloropropene	20	B	1,750		Yes	No
542-88-1	Bis(chloromethyl)ether	0.0000160	A	NO SQER		Yes	Yes (Query)
542-92-7	Cyclopentadiene	680	B	43,748		Yes	No
55-18-5	N-Nitrosodiethylamine (diethylnitrosoamine)(DEN)	0.0000230	A	NO SQER		Yes	Yes (Query)
552-30-7	Trimellitic anhydride	0.13	B	175		No	No
55-38-9	Fenthion	0.67	B	175		Yes	No
55-63-0	Nitroglycerin	1.5	B	175		No	No
556-52-5	Glycidol	250	B	43,748		Yes	No
55720-99-5	Chlorinated diphenyl oxide (hexachlorophenyl ether)	1.7	B	175		No	No
558-13-4	Carbon tetrabromide	4.7	B	175		Yes	No
56-23-5	Carbon tetrachloride	0.0670000	A	20	*	Yes	No
563-12-2	Ethion	1.3	B	175		No	No
563-80-4	Methyl isopropyl ketone	2300	B	43,748		Yes	No
56-38-2	Parathion	0.33	B	175		No	No
5714-22-7	Sulfur pentafluoride	0.33	B	175		Yes	Yes (SQER Fits)
57-14-7	1,1-Dimethylhydrazine	4.0	B	175		Yes	No
57-24-9	Strychnine	0.5	B	175		No	No
57-57-8	B-Propiolactone	5.0	B	175		Yes	No
57-74-9	Chlordane	0.0027000	A	0.5	*	No	No
583-60-8	o-Methylcyclohexanone	760	B	43,748		Yes	No
584-84-9	2,4-Toluene diisocyanate	0.1200000	A	20	*	No	No
58-89-9	Hexachlorocyclohexane (Lindane) gamma BHC	0.0026000	A	0.5		No	No
591-78-6	2-Hexanone (MBK)	67	B	10,500	*	Yes	No
59355-75-8	Methyl acetylene-propadiene mixture (MAPP)	5500	B	43,748		Yes	No
593-60-2	Vinyl bromide	73	B	10,500		Yes	No
594-42-3	Perchloromethyl mercaptan	2.5	B	175		Yes	No
594-72-9	1,1-Dichloro-1-nitroethane	40	B	5,250		Yes	No
600-25-9	1-Chloro-1-nitropropane	33	B	5,250		Yes	No
60-11-7	Dimethyl aminoazobenzene	0.15	B	175		No	No
60-29-7	Ethyl ether	4000	B	43,748	*	Yes	No
603-34-9	Triphenylamine	17	B	1,750		No	No
60-34-4	Methyl hydrazine	1.2	B	175		Yes	No
60-35-5	Acetamide	0.15	B	175		Yes	Yes (SQER Fits)
60-57-1	Dieldrin	0.0002200	A	NO SQER		No	No
61-82-5	Amitrole	0.06	A	10		No	No
624-83-9	Methyl isocyanate	0.16	B	175		Yes	Yes (SQER Fits)
62-53-3	Aniline & homologues	1.0	B	175		Yes	No
62-53-3	Aniline	6.3000000	A	500		Yes	No
626-17-5	m-Phthalodinitrile	17	B	1,750		No	No
626-38-0	sec-Amyl acetate	2200	B	43,748		Yes	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

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627-13-4	n-Propyl nitrate	360	B	43,748		Yes	No
62-73-7	Dichlorvas	3.3	B	175		No	No
62-74-8	Sodium fluoroacetate	0.17	B	175		No	No
62-75-9	N-Nitrosodimethylamine	0.0000710	A	NO SQER		Yes	Yes (Query)
628-63-7	n-Amyl acetate	1800	B	43,748	*	Yes	No
628-96-6	Ethylene glycol dinitrate	1.0	B	175		No	No
63-25-2	Carbaryl	17	B	1,750		No	No
636-21-5	o-Toluidine hydrochloride	0.1400000	A	50		Yes	No
638-21-1	Phenylphosphine	0.77	B	175		Yes	No
64-17-5	Ethyl alcohol	6300	B	43,748	*	Yes	No
64-18-6	Formic acid	31	B	5,250	*	Yes	No
64-19-7	Acetic acid	83	B	10,500	*	Yes	No
6423-43-4	Propylene glycol dinitrate	1.1	B	175		No	No
64-67-5	Diethyl sulfate	0.15	B	175		Yes	Yes (SQER Fits)
67-56-1	Methyl alcohol	870	B	43,748	*	Yes	No
67-63-0	Isopropyl alcohol	3300	B	43,748	*	Yes	No
67-64-1	Acetone	5900	B	43,748	*	Yes	No
67-66-3	Chloroform	0.0430000	A	10	*	Yes	No
67-72-1	Hexachloroethane	32	B	5,250	*	Yes	No
68-11-1	Thioglycolic acid	13	B	1,750		Yes	No
68-12-2	Dimethylformamide	30	B	5,250	*	Yes	No
681-84-5	Methyl silicate	20	B	1,750		Yes	No
684-16-2	Hexafluoroacetone	2.3	B	175		Yes	No
68476-85-7	Liquified petroleum gas	6000	B	43,748		Yes	No
684-93-5	N-Nitroso-N-methylurea	0.15	B	175		No	No
6923-22-4	Monocrotophos	0.83	B	175		No	No
71-23-8	n-Propyl alcohol	1600	B	43,748		Yes	No
71-36-3	n-Butyl alcohol	500	B	43,748	*	Yes	No
71-43-2	Benzene	0.1200000	A	20	*	Yes	No
71-55-6	Methyl chloroform (1,1,1-Trichloroethane)	6400	B	43,748	*	Yes	No
72-20-8	Endrin	0.33	B	175	*	No	No
72-43-5	Methoxychlor	33	B	5,250		No	No
7429-90-5	Aluminum, Al alkyls	6.7	B	175	*	No	No
7429-90-5	Aluminum, as Al soluble salts	6.7	B	175	*	No	No
7429-90-5	Aluminum, as AL pyro powders	17	B	1,750	*	No	No
7429-90-5	Aluminum, as Al welding fumes	17	B	1,750	*	No	No
7429-90-5	Aluminum, as AL metal dust	33	B	5,250	*	No	No
7439-96-5	Manganese dust & compounds	0.40	B	175		No	No
7439-96-5	Manganese fume	3.3	B	175		No	No
7439-97-6	Mercury, Aryl & inorganic cmpd	0.33	B	175	*	No	No
7439-97-6	Mercury, as Hg Alkyl compounds	0.33	B	175	*	No	No
7439-97-6	Mercury, vapors except alkyl	0.17	B	175		No	No
7439-98-7	Molybdenum, as Mo soluble cpds	17	B	1,750	*	No	No
7439-98-7	Molybdenum, insoluble cpds	33	B	5,250	*	No	No
7440-02-0	Nickel and compounds (as nickel subsulfide or nickel refinery dust)	0.0021000	A	0.5	*	No	No
7440-06-4	Platinum, Metal	3.3	B	175		No	No
7440--06-4	Platinum, Soluble salts as Pt	0.0067	B	175		No	No
7440-16-6	Rhodium Metal	3.3	B	175	*	No	No
7440-16-6	Rhodium, Insoluble compounds	3.3	B	175	*	No	No
7440-16-6	Rhodium, Soluble compounds	0.033	B	175	*	No	No
7440-22-4	Silver, Metal	0.33	B	175	*	No	No
7440-22-4	Silver, soluble compounds as Ag	0.033	B	175	*	No	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
7440-25-7	Tantalum, metal & oxide dusts	17	B	1,750		No	No
7440-28-0	Thallium, soluble compounds, Tl	0.33	B	175		No	No
7440-31-5	Tin, Metal	6.7	B	175		No	No
7440-31-5	Tin, Organic compounds, as Sn	0.33	B	175		No	No
7440-31-5	Tin, oxide & inorganic except SnH4	6.7	B	175		No	No
7440-33-7	Tungsten, Soluble compounds	3.3	B	175		No	No
7440-33-7	Tungsten, Insoluble compounds	17	B	1,750		No	No
7440-36-0	Antimony & compounds as Sb	1.7	B	175	*	No	No
7440-38-2	Arsenic and inorganic arsenic compounds	0.0002300	A	NO SQER	*	No	No
7440-39-3	Barium, soluble compounds Ba	1.7	B	175	*	No	No
7440-41-7	Beryllium and compounds	0.0004200	A	NO SQER	*	No	No
7440-43-9	Cadmium and compounds	0.0005600	A	NO SQER	*	No	No
7440-47-3	Chromium (III) compounds, Cr	1.7	B	175	*	No	No
7440-47-3	Chromium (metal)	1.7	B	175	*	No	No
7440-47-3	Chromium (II) compounds, as Cr	1.7000000	A	500	*	No	No
7440-47-3	Chromium, hexavalent metal and compounds	0.0000830	A	NO SQER	*	No	No
7440-48-4	Cobalt as Co metal Dust and fume	0.17	B	175	*	No	No
7440-50-8	Copper, Dusts and mists, as Cu	3.3	B	175	*	No	No
7440-50-8	Copper, Fume	0.67	B	175	*	No	No
7440-58-6	Hafnium	1.7	B	175		No	No
7440-61-1	Uranium, insoluble & soluble	0.67	B	175	*	No	No
7440-65-5	Yttrium, metal and cpds as Y	3.3	B	175		No	No
7440-67-7	Zirconium compounds, as Zr	17	B	1,750	*	No	No
7440-74-6	Indium, & compounds as In	0.33	B	175		No	No
74-83-9	Methyl bromide	5.0	B	175	*	Yes	No
74-87-3	Methyl chloride	340	B	43,748	*	Yes	No
74-88-4	Methyl iodide	40	B	5,250	*	Yes	No
74-89-5	Methylamine	43	B	5,250	*	Yes	No
74-90-8	Hydrogen cyanide	37	B	5,250		Yes	No
74-93-1	Methyl mercaptan	3.3	B	175		Yes	No
74-96-4	Ethyl bromide	3000	B	43,748		Yes	No
74-97-5	Chlorobromomethane	3500	B	43,748	*	Yes	No
74-99-7	Methyl acetylene	5500	B	43,748		Yes	No
75-00-3	Ethyl chloride	10000	B	43,748	*	Yes	No
75-01-4	Vinyl chloride	0.0120000	A	10	*	Yes	No
75-04-7	Ethylamine	60	B	10,500		Yes	No
75-05-8	Acetonitrile	220	B	22,750	*	Yes	No
75-07-0	Acetaldehyde	0.4500000	A	50	*	Yes	No
75-08-1	Ethyl mercaptan	4.3	B	175		Yes	No
75-09-2	Dichloromethane (methylene chloride)	0.5600000	A	50	*	Yes	No
75-12-7	Formamide	60	B	10,500	*	Yes	No
75-15-0	Carbon disulfide	100	B	17,500	*	Yes	No
75-21-8	Ethylene oxide	0.0100000	A	0.5	*	Yes	No
75-25-2	Bromoform	0.9100000	A	50		Yes	No
75-31-0	Isopropylamine	40	B	5,250		Yes	No
75-34-3	1,1-Dichloroethane	2700	B	43,748	*	Yes	No
75-35-4	Vinylidene chloride	67	B	10,500	*	Yes	No
75-43-4	Dichlorofluoromethane	130	B	22,750		Yes	No
75-44-5	Phosgene	1.3	B	175		Yes	No
75-45-6	Chlorodifluoromethane	12000	B	43,748	*	Yes	No
75-47-8	Iodoform	33	B	5,250		Yes	No
75-50-3	Trimethylamine	80	B	10,500		Yes	No

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CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
7550-45-0	Titanium tetrachloride	0.15	B	175		Yes	Yes (SQER Fits)
75-52-5	Nitromethane	830	B	43,748	*	Yes	No
7553-56-2	Iodine	3.3	B	175	*	Yes	No
75-55-8	Propylene imine	16	B	1,750		Yes	No
75-56-9	Propylene oxide	0.2700000	A	50		Yes	No
75-61-6	Difluorodibromomethane	2900	B	43,748		Yes	No
75-63-8	Trifluorobromomethane	20000	B	43,748		Yes	No
75-65-0	tert-Butyl alcohol	1000	B	43,748	*	Yes	No
75-69-4	Trichlorofluoromethane	19000	B	43,748	*	Yes	No
75-71-8	Dichlorodifluoromethane	16000	B	43,748	*	Yes	No
7572-29-4	Dichloroacetylene	1.3	B	175		Yes	No
75-74-1	Tetramethyl lead, as Pb	0.5	B	175		Yes	No
7580-67-8	Lithium hydride	0.080	B	175		No	No
75-99-0	2,2-Dichloropropionic acid	19	B	1,750		Yes	No
76-03-9	Trichloroacetic acid	22	B	1,750	*	Yes	No
76-06-2	Chloropicrin	2.2	B	175		Yes	No
76-11-9	1,1,1,2-Tetrachloro-2,2-difluoro-ethane	14000	B	43,748		Yes	No
76-12-0	1,1,2,2-Tetrachloro-1,2-difluoro-ethane	14000	B	43,748		Yes	No
76-13-1	1,1,2-Trichloro-1,2,2-trifluorethane	27000	B	43,748	*	Yes	No
76-14-2	Dichlorotetrafluoroethane	23000	B	43,748		Yes	No
76-15-3	Chloropentafluoroethane	21000	B	43,748		Yes	No
7616-94-6	Perchloryl fluoride	43	B	5,250		Yes	No
76-22-2	Camphor, synthetic	40	B	5,250	*	Yes	No
7631-90-5	Sodium bisulfite	17	B	1,750	*	No	No
7637-07-2	Boron trifluoride	9.3	B	175		Yes	No
764-41-0	1,4-Dichloro-2-butene	0.0003800	A	NO SQER		Yes	Yes (Query)
76-44-8	Heptachlor	0.0007700	A	NO SQER	*	No	No
7646-85-7	Zinc chloride fume	3.3	B	175	*	No	No
7647-01-0	Hydrogen chloride	7.0	B	175	*	Yes	No
7664-38-2	Phosphoric acid	3.3	B	175	*	No	No
7664-39-3	Hydrogen fluoride, as F	8.7	B	175	*	Yes	No
7664-41-7	Ammonia	100	B	17,500	*	Yes	No
7664-93-9	Sulfuric acid	3.3	B	175	*	No	No
7681-57-4	Sodium metabisulfite	17	B	1,750		No	No
768-52-5	N-Isopropylaniline	37	B	5,250		No	No
7697-37-2	Nitric acid	17	B	1,750	*	Yes	No
7719-09-7	Thionyl chloride	16	B	1,750		Yes	No
7719-12-2	Phosphorus trichloride	3.7	B	175		Yes	No
7722-84-1	Hydrogen peroxide	4.7	B	175	*	Yes	No
7722-88-5	Tetrasodium pyrophosphate	17	B	1,750	*	No	No
7723-14-0	Phosphorus	0.33	B	175	*	No	No
7726-95-6	Bromine	2.2	B	175		Yes	No
77-47-4	Hexachlorocyclopentadiene	0.33	B	175		Yes	Yes (SQER Fits)
7758-97-6	Lead chromate, as Cr	0.040	B	175	*	No	No
7773-06-0	Ammonium sulfamate	33	B	5,250		No	No
77-73-6	Dicyclopentadiene	100	B	17,500	*	Yes	No
77-78-1	Dimethyl sulfate	1.7000000	A	500	*	Yes	No
7782-41-4	Fluorine	5.3	B	175		Yes	No
7782-49-2	Selenium compounds, as Se	0.67	B	175	*	No	No
7782-50-5	Chlorine	5.0	B	175		Yes	No
7782-65-2	Germanium tetrahydride	2.1	B	175		Yes	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
7783-06-4	Hydrogen sulfide	0.9	B	175		Yes	No
7783-07-5	Hydrogen selenide, as Se	0.53	B	175		Yes	No
7783-41-7	Oxygen difluoride	0.37	B	175		Yes	No
7783-54-2	Nitrogen trifluoride	97	B	10,500		Yes	No
7783-60-0	Sulfur tetrafluoride	1.5	B	175		Yes	No
7783-79-1	Selenium hexafluoride, as Se	0.53	B	175		Yes	No
7783-80-4	Tellurium hexafluoride, as Te	0.33	B	175		Yes	No
7784-42-1	Arsine	0.53	B	175		Yes	No
7786-34-7	Mevinphos	0.33	B	175		No	No
7789-30-2	Bromine pentafluoride	2.4	B	175		Yes	No
7790-91-2	Chlorine trifluoride	1.3	B	175		Yes	No
78-00-2	Tetraethyl lead, as Pb	0.33	B	175		Yes	Yes (SQER Fits)
7803-51-2	Phosphine	1.3	B	175		Yes	No
7803-52-3	Stibine	1.7	B	175		Yes	No
7803-62-5	Silicon tetrahydride	22	B	1,750		Yes	No
78-10-4	Ethyl silicate	280	B	43,748	*	Yes	No
78-30-8	Tri-O-Cresyl Phosphate	0.33	B	175		No	No
78-34-2	Dioxathion	0.67	B	175		Yes	No
78-59-1	Isophorone	93	B	10,500		Yes	No
78-83-1	Isobutyl alcohol	510	B	43,748	*	Yes	No
78-87-5	1,2-Dichloropropane	4.0000000	A	500	*	Yes	No
78-92-2	sec-Butyl alcohol	1000	B	43,748	*	Yes	No
78-93-3	Methyl ethyl ketone (MEK)	1000	B	43,748	*	Yes	No
79-00-5	1,1,2-Trichloroethane	180	B	22,750	*	Yes	No
79-01-6	Trichloroethylene	0.5900000	A	50	*	Yes	No
79-04-9	Chloroacetyl chloride	0.67	B	175		Yes	No
79-06-1	Acrylamide	0.0007700	A	NO SQER		No	No
79-09-4	Propionic acid	100	B	17,500	*	Yse	No
79-10-7	Acrylic acid	0.30	B	175	*	Yes	Yes (SQER Fits)
79-11-8	Chloroacetic acid	0.15	B	175	*	No	No
79-20-9	Methyl acetate	2000	B	43,748		Yes	No
79-24-3	Nitroethane	1000	B	43,748		Yes	No
79-27-6	Acetylene tetrabromide	47	B	5,250	*	No	No
79-34-5	1,1,2,2-Tetrachloroethane	23	B	1,750	*	Yes	No
79-41-4	Methacrylic acid	230	B	22,750		Yes	No
79-44-7	Dimethyl carbamoyl chloride	0.15	B	175		Yes	Yes (SQER Fits)
79-46-9	2-Nitropropane	0.0003700	A	NO SQER		Yes	Yes (Query)
8001-35-2	Toxaphene	0.0031000	A	0.5		Yes	No
8002-74-2	Paraffin wax fume	6.7	B	175		No	No
8003-34-7	Pyrethrum	1.7	B	175		No	No
8006-64-2	Turpentine	1900	B	43,748		Yes	No
8012-95-1	Oil mist, mineral	17	B	1,750	*	Yes	No
8022-00-2	Methyl demeton	1.7	B	175		No	No
8032-32-4	VM & P Naphtha	4600	B	43,748	*	Yes	No
8052-42-4	Asphalt (petroleum) fumes	17	B	1,750	*	Yes	No
80-62-6	Methyl methacrylate	1400	B	43,748	*	Yes	No
8065-48-3	Demeton	0.37	B	175		No	No
81-81-2	Warfarin	0.33	B	175		No	No
822-06-0	Hexamethylene diisocyanate	0.11	B	175		No	No
82-68-8	Pentachloronitrobenzene (quintobenzene)	1.7	B	175		No	No
83-26-1	Pindone	0.033	B	175		No	No

List of Regulated Chemicals from WAC 173-460, sorted numerically by CAS #.

CAS #	SUBSTANCE	ASIL	CLASS	SQER in POUNDS	Present in current inventory	Volatile? Yes/No	Will Tracking Be Required?
83-79-4	Rotenone	17	B	1,750		No	No
84-66-2	Diethyl phthalate	17	B	1,750		No	No
84-74-2	Dibutyl phthalate	17	B	1,750	*	No	No
85-00-7	Diquat	1.7	B	175		No	No
85-44-9	Phthalic anhydride	20	B	1,750		No	No
86-50-0	Azinphos-methyl	0.67	B	175		No	No
86-88-4	ANTU	1.0	B	175		No	No
87-68-3	Hexachlorobutadiene	0.70	B	175	*	Yes	No
87-86-5	Pentachlorophenol	0.3300000	A	50	*	No	No
88-06-2	2,4,6-Trichlorophenol	0.3200000	A	50		Yes	No
88-72-2	Nitrotoluene	37	B	5,250		Yes	No
88-89-1	Picric acid	0.33	B	175	*	No	No
89-72-5	o-sec-Butylphenol	100	B	17,500		Yes	No
90-04-0	o-Anisidine	1.7000000	A	500		No	No
91-20-3	Napthalene	170	B	22,750	*	Yes	No
91-22-5	Quinoline	0.15	B	175	*	Yes	Yes (SQER Fits)
91-94-1	3,3'-Dichlorobenzidine	0.0770000	A	20		No	No
924-16-3	N-Nitrosodi-n-butylamine	0.0006300	A	NO SQER		No	No
92-52-4	Biphenyl	4.3	B	175		No	No
92-84-2	Phenothiazine	1.7	B	175		No	No
92-87-5	Benzidine and its salts	0.0000150	A	NO SQER		No	No
92-93-3	4-Nitrobiphenyl	0.15	B	175		No	No
93-76-5	2,4,5-T	33	B	5,250		No	No
94-36-0	Benzoyl Peroxide	17	B	1,750		No	No
944-22-9	Fonofos	0.33	B	175		No	No
94-75-7	2,4-D and esters	33.0000000	A	500	*	No	No
95-13-6	Indene	160	B	22,750	*	Yes	No
95-49-8	o-Chlorotoluene	860	B	43,748		Yes	No
95-50-1	o-Dichlorobenzene (1,2-Dichlorobenzene)	1000	B	43,748		Yes	No
95-53-4	o-Toluidine	0.1400000	A	50		Yes	No
95-80-7	2,4-Toluene diamine	0.0110000	A	10		No	No
95-95-4	2,4,5-Trichlorophenol	0.15	B	175	*	No	No
96-09-3	Styrene oxide	0.15	B	175		Yes	Yes (SQER Fits)
96-12-8	1,2-Dibromo-3-chloropropane	0.20	B	175		Yes	Yes (SQER Fits)
96-18-4	1,2,3-Trichloropropane	200	B	22,750		Yes	No
96-22-0	Diethyl ketone	2300	B	43,748		Yes	No
96-33-3	Methyl acrylate	120	B	17,500		Yes	No
96-45-7	Ethylene thiourea	1.0000000	A	500		Yes	No
96-69-5	4,4-Thiobis(6-tert, butyl-m-cresol)	33	B	5,250		No	No
97-77-8	Disulfiram	6.7	B	175		Yes	No
98-00-0	Furfuryl alcohol	130	B	22,750	*	Yes	No
98-01-1	Furfural	26	B	1,750	*	Yes	No
98-07-7	Benzotrichloride	0.15	B	175		Yes	Yes (SQER Fits)
98-51-1	p-tert-Butyltoluene	200	B	22,750		Yes	No
98-82-8	Cumene	820	B	43,748		Yes	No
98-83-9	a-Methyl styrene	810	B	43,748		Yes	No
98-86-2	Acetophenone	0.15	B	175	*	Yes	Yes (SQER Fits)
98-95-3	Nitrobenzene	1.7	B	175	*	Yes	No
999-61-1	2-Hydroxypropyl acrylate	9	B	175		Yes	No

ASSUMPTIONS

If the vapor pressure of a compound is below 0.1 mm Hg, it is assumed that the compound is not volatile.

If the vapor pressure is below 0.1 mm Hg, even though the compound might have an odor and a slight release potential, the potential for release is so low that it would not be possible to release enough material to exceed the ASIL, even if 55 gallons of the pure chemical were in an open container.

Some of decisions for whether a compound was volatile or not were based on the SQER. If the SQER exceeds what physically could be placed in a drum, and the vapor pressure was unknown, it does not really matter.

If the vapor pressure of a compound is greater than 760 mm Hg, the compound is a gas or is dissolved in a liquid. The compound should not be present in the container, unless the liquid is containerized in a labpack.

If a SQER value reads NO SQER, the ASIL is below the lowest value provided in the SQER table of WAC 173-460. These are not TAP issues, unless the "Volatile?" column is marked "Yes".

If any of the following six CAS #'s show up for evaluation, contact Environmental Services as additional calculations are needed. 302-01-2, 542-88-1, 55-18-5, 62-75-9, 764-41-0 and 79-46-9. None of these chemicals are in inventory as of March 2000.

CAS #'s preceded by ** are assigned as worst-case examples for the related group of chemicals represented.

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